

COMMERCIAL STANDARD CS237-61

**Dimensions and Tolerances for
Schedule A Type I and Schedule A
Type II Rigid Polyvinyl Chloride
Pipe (Lightweight PVC Pipe)**

A recorded
voluntary standard of the
trade published by
the U.S. Department
of Commerce



U.S. DEPARTMENT OF COMMERCE
BUSINESS AND DEFENSE SERVICES ADMINISTRATION
OFFICE OF TECHNICAL SERVICES
Commodity Standards Division

With the cooperation of the
National Bureau of Standards

EFFECTIVE DATE

Having been passed through the regular procedures of the Commodity Standards Division, and approved by the acceptors hereinafter listed, this Commercial Standard is issued by the U.S. Department of Commerce, effective July 1, 1961.

LUTHER H. HODGES, *Secretary.*

COMMERCIAL STANDARDS

Commercial Standards are developed by manufacturers, distributors, and users in cooperation with the Commodity Standards Division of the Office of Technical Services, Business and Defense Services Administration, and with the National Bureau of Standards. Their purpose is to establish quality criteria, standard methods of test, rating, certification, and labeling of manufactured commodities, and to provide uniform bases for fair competition.

The adoption and use of a Commercial Standard is voluntary. However, when reference to a Commercial Standard is made in contracts, labels, invoices, or advertising literature, the provisions of the standard are enforceable through usual legal channels as a part of the sales contract.

Commercial Standards originate with the proponent industry. The sponsors may be manufacturers, distributors, or users of the specific product. One of these three elements of industry submits to the Commodity Standards Division the necessary data to be used as the basis for developing a standard of practice. The division by means of assembled conferences or letter referenda, or both, assists the sponsor group in arriving at a tentative standard of practice and thereafter refers it to the other elements of the same industry for approval or for constructive criticism that will be helpful in making any necessary adjustments. The regular procedure of the division assures continuous servicing of each Commercial Standard through review and revision whenever, in the opinion of the industry, changing conditions warrant such action.

SIMPLIFIED PRACTICE RECOMMENDATIONS

Under a similar procedure the Commodity Standards Division cooperates with industries in the establishment of Simplified Practice Recommendations. Their purpose is to eliminate avoidable waste through the establishment of standards of practice for sizes, dimensions, varieties, or other characteristics of specific products; to simplify packaging practices; and to establish simplified methods of performing specific tasks.

COMMERCIAL STANDARD CS237-61

LIGHTWEIGHT PVC PIPE

Supplementary List of Acceptors

The organizations listed below have individually indicated in writing their acceptance of this Commercial Standard, and should be added to the list of acceptors shown on page 6 of printed copies of the standard.

Baldwin Extruded Products, Downey, Calif.
Carlson Products Corp., Aurora, Ohio.
Diversified Plastics, Inc., Memphis, Tenn.
Perma Spray Manufacturing Co., Inc.,
Miami, Fla.

COMMODITY STANDARDS DIVISION
OFFICE OF TECHNICAL SERVICES
U. S. DEPARTMENT OF COMMERCE

December 5, 1961

USCOMM-DC-46,109

Dimensions and Tolerances for Schedule A Type I and Schedule A Type II Rigid Polyvinyl Chloride Pipe (Lightweight PVC Pipe)

(Effective July 1, 1961)

1. PURPOSE

1.1 The purpose of this Commercial Standard is to establish standard dimensions and tolerances for two types of rigid polyvinyl chloride pipe. It is also intended to secure national recognition for the practices described, and to promote understanding between producers and users regarding them.

2. SCOPE

2.1 This standard applies to Schedule A Type I and Schedule A Type II rigid polyvinyl chloride pipe, and covers eleven sizes of this lightweight PVC pipe. It includes outside diameters and tolerances; minimum and maximum wall thicknesses; inspection procedures; identification markings; and a recommended method for declaring compliance with this standard.

3. REQUIREMENTS

3.1 **Material.**—The pipe shall be made from one of the following types of rigid poly (vinyl chloride) plastic as specified in ASTM Tentative Specification for Rigid Poly (Vinyl Chloride) Compounds, designation D1784-60T:

Type I—High Chemical Resistance, Normal Impact
Type II—High Impact, Normal Chemical Resistance

3.2 **Sizes.**—The sizes of the pipe shall be in accordance with the respective dimensions and tolerances given in Table 1. These sizes and corresponding outside diameters are the same as iron pipe sizes (IPS). However, it should be noted that this is light weight pipe and is not intended to be threaded.

4. INSPECTION PROCEDURE

4.1 The dimensions of the pipe may be determined at any point in its length. Measurements shall be made at a temperature of 23° C plus or minus 1° C (73.4° F plus or minus 1.8° F) and shall be taken with a micrometer accurate to plus or minus 0.001 inch. The pipe shall conform to the applicable dimensions and tolerances. If the pipe is out of round, the average of the maximum and minimum outside

TABLE 1.—Dimensions and tolerances for Schedule A Type I and Schedule A Type II Rigid Polyvinyl Chloride Pipe. (Lightweight PVC Pipe)

Nominal size	Outside diameter ¹		Wall thickness	
	Diameter	Tolerance	Minimum	Maximum
<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>
3/8	0.875	±0.008	0.050	0.056
1/2	.840	±.008	.050	.056
3/4	1.050	±.010	.055	.062
1	1.315	±.010	.060	.067
1 1/4	1.660	±.012	.070	.078
1 1/2	1.900	±.012	.080	.090
2	2.375	±.012	.100	.112
2 1/2	2.875	±.015	.120	.134
3	3.500	±.015	.146	.164
3 1/2	4.000	±.015	.170	.190
4	4.500	±.015	.195	.218

¹ If the pipe is out of round, the tolerances given apply to the average outside diameter, which is the average of the maximum and minimum outside diameters as determined at any one cross section of the pipe.

diameters at any one cross section shall be within the tolerances given. Pipe which fails to conform to these requirements shall be considered as not complying with this Commercial Standard.

5. IDENTIFICATION

5.1 Marking.—Each length of pipe, or every five feet, whichever is the shorter, shall be marked with the proper symbol for its type, namely "PVC I" or "PVC II," with the nominal size and schedule designation, and with the manufacturer's name or registered trade mark, or other symbol clearly identifying the manufacturer.

6. COMPLIANCE

6.1 In order that purchasers may be assured that lightweight rigid polyvinyl chloride pipe actually complies with the standard dimension and other requirements of this Commercial Standard, it is recommended that manufacturers include the following statement in conjunction with their name and address, on labels, invoices, sales literature, etc:

This lightweight rigid polyvinyl chloride pipe complies with the dimensions and other requirements of Commercial Standard CS237-61, as developed by the trade under the Commodity Standards Procedures, and issued by the U.S. Department of Commerce.

HISTORY OF PROJECT

On May 21, 1959, The Society of the Plastics Industry, Inc., requested the cooperation of the Commodity Standards Division in the development of a Commercial Standard covering Dimensions and Tolerances for Schedule A, Type II (Lightweight) Rigid Polyvinyl Chloride Pipe. A draft proposal, submitted by the SPI at that time, was used as the basis for the Proposed Commercial Standard.

Later, a similar request and draft were submitted by the SPI to cover development of a Commercial Standard for Dimensions and Tolerances for Schedule A Type I (Lightweight) Rigid Polyvinyl Chloride Pipe.

On February 25, 1960, two separate Proposed Commercial Standards covering Schedule A Type I and Schedule A Type II Lightweight Rigid Polyvinyl Chloride Pipe were circulated to the industry for advance consideration and comment. In addition to a few suggested adjustments, the comment indicated that the two proposals should be combined into one proposed standard covering both Type I and Type II pipe. The PVC Pipe and Fittings Committee of the SPI reviewed the comment and submitted an adjusted Proposed Commercial Standard to cover Type I and Type II pipe.

The Recommended Commercial Standard for Dimensions and Tolerances for Schedule A Type I and Schedule A Type II Rigid Polyvinyl Chloride Pipe (Lightweight PVC Pipe) was circulated to the industry for written acceptance on February 15, 1961.

Following receipt of approval by manufacturers of the pipe, in addition to approval by a representative cross-section of other segments of the industry, an announcement was issued on June 9, 1961, that the Commercial Standard, CS237-61, would become effective July 1, 1961.

Project Manager: H. A. Bonnet, Commodity Standards Division, Office of Technical Services, U.S. Department of Commerce.

Technical Adviser: Dr. Frank W. Reinhart, Chief, Plastics Section, National Bureau of Standards.

STANDING COMMITTEE

The function of the Standing Committee is to review, prior to circulation for acceptance, changes proposed to keep the standard abreast of progress. Comments concerning the standard and suggestions for revision may be addressed to the Commodity Standards Division, Office of Technical Services, U.S. Department of Commerce, which acts as secretary for the Committee, or to any of its members listed below:

- C. R. Owen, The Colonial Plastics Manufacturing Co., 2685 East 79th St., Cleveland 4, Ohio (Chairman)
- George H. Reed, American-Hard Rubber Co., Division of Amerace Corp., Ace Road, Butler, N.J.
- F. J. Staudt, E. I. du Pont de Nemours & Co., Inc., Engineering Dept., Wilmington 98, Del.
- J. E. Lennon, Peter A. Frasse Co., 17 Grand St., New York 13, N.Y.
- J. R. McCutcheon, Jr., Piping Supplies Dept., Industrial Supplies, P.O. Box 1168, Pittsburgh 30, Pa.
- S. W. Prince, Prince Rubber & Plastics Co., Inc., 1675 Niagara St., Buffalo 7, N.Y.
- William E. Enright, Glamorgan Pipe & Foundry Co., Plastics Division, Lynchburg, Va.

ACCEPTORS

The manufacturers, distributors, users and others listed below have individually indicated in writing their acceptance of this Commercial Standard prior to its publication. The acceptances indicate an intention to utilize the standard as far as practicable but reserve the right to depart from it as may be deemed desirable. The list is published to show the extent of recorded public support for the standard, and should not be construed as indicating that all products made by the acceptors actually comply with its requirements.

Products that meet all requirements of the standard may be identified as such by a certificate, grademark or label. Purchasers are encouraged to require such specific evidence of compliance, which may be given by the manufacturer whether or not he is an acceptor.

ASSOCIATIONS

(General Support)

Home Manufacturers Association, Washington, D.C.

FIRMS AND OTHER INTERESTS

Alpha Plastics, Inc., Livingston, N.J.
Arizona Plastic Extrusion Co., Phoenix, Ariz.

Bolta Products Division, The General Tire & Rubber Co., Lawrence, Mass.
Busada Manufacturing Corp., Flushing, N.Y.

Colonial Plastics Manufacturing Co., The, Cleveland, Ohio
Corroplast, Inc., Passaic, N.J.
Crescent Plastics, Inc., Evansville, Ind.
Crown-Line Plastics, Inc., Hamburg, Iowa.

Dixie Plastics Manufacturing Co., New Orleans, La.

Evanite Plastic Co., Division of The Evans Pipe Co., Carrollton, Ohio

General Motors Corp., Warren, Mich.
Goodall Rubber Co., Trenton, N.J.
Goodrich, B. F., Industrial Products Co., Marietta, Ohio
Grinnell Co., Inc., Providence, R.I.

Industrial Plastic Fittings Division, R & K Plastic Industries, Cleveland, Ohio (General Support)

Mannesmann-Easton Plastic Products Co., Inc., Easton, Pa.
Marken Plastic Corp., Los Angeles, Calif.
Mueller Brass Co., Port Huron, Mich.
Mueller Co., Decatur, Ill.

National Tube Division, United States Steel Corp., Pittsburgh, Pa.

Patzig Testing Laboratories, Des Moines, Iowa.
Pittsburgh Gage & Supply Co., Pittsburgh, Pa.
Plastiline, Inc., Pompano Beach, Fla.

St. Regis Paper Co., Panelyte Division, Richmond, Ind.
Sears, Roebuck and Co., Chicago, Ill.
SEDCO Manufacturing Co., Miami, Fla.
Skyline Industries Sales, Inc., Titusville, Pa.
Skyline Plastic Pipe, Inc., Titusville, Pa.

Telsco Industries, Dallas, Tex.
Thermoplastics Corp., Charlotte, N.C.
Tube-Kote, Inc., Houston, Tex.

Union Carbide Plastics Division, Union Carbide Corp., New York, N.Y. (General Support)
United States Testing Co., Inc., Hoboken, N.J.

Welsbach Corp., Kitson Valve Division, Philadelphia, Pa. (General Support)
Western Plastics Corp., Tacoma, Wash. (General Support)

U.S. GOVERNMENT

Atomic Energy Commission, Property & Supply Management Branch, Washington, D.C.
Army, Department of, Office of the Chief of Engineers, Washington, D.C.
National Park Service, Department of the Interior, Washington, D.C.
Post Office Department, Bureau of Facilities, Washington, D.C.

ADDITIONAL ACCEPTORS

Anjac Plastics, Inc., El Monte, Calif.
Glamorgan Pipe & Foundry Co., Plastics Division, Lynchburg, Va.
Southwestern Plastic Pipe Company of Arizona, Phoenix, Ariz.

Stauffer Chemical Co., Molded Products Division, Los Angeles, Calif.
Neuffer/Kruntorad-Gesellschaft Für Kommunikation (Plastics Dept.), Vienna, Austria.

OTHER COMMERCIAL STANDARDS

A list of Commercial Standards may be obtained from the Commodity Standards Division, Office of Technical Services, U.S. Department of Commerce, Washington 25, D.C. This list includes the purchase price of the publication and directions for ordering copies.

ACCEPTANCE OF COMMERCIAL STANDARD

CS237-61 Dimensions and Tolerances for Schedule A Type I and Schedule A Type II Rigid Polyvinyl Chloride Pipe (Lightweight PVC Pipe)

If acceptance has not previously been filed, this sheet properly filled in, signed, and returned will provide for the recording of your organization as an acceptor of this Commercial Standard.

Date _____

Commodity Standards Division
Office of Technical Services
Business and Defense Services Administration
U. S. Department of Commerce
Washington 25, D. C.

Gentlemen:

We believe that this Commercial Standard constitutes a useful standard of practice, and we individually plan to utilize it as far as practicable in the

production¹ distribution¹ purchase¹ testing¹
of this commodity.

We reserve the right to depart from the standard as we deem advisable.

We understand, of course, that only those articles which actually comply with the standard in all respects can be identified or labeled as conforming thereto.

Signature of authorized officer _____
(In ink)

(Kindly typewrite or print the following lines)

Name and title of above officer _____

Organization _____

(Fill in exactly as it should be listed)

Street address _____

City, zone, and State _____

¹Underscore the applicable words. Please see that separate acceptances are filed for all subsidiary companies and affiliates which should be listed separately as acceptors. In the case of related interest, trade associations, trade papers, etc., desiring to record their general support, the words "General support" should be added after the signature.

(Cut on this line)

TO THE ACCEPTOR

The following statements answer the usual questions arising in connection with the acceptance and its significance:

1. *Enforcement.*—Commercial Standards are commodity specifications voluntarily established by mutual consent of those concerned. They present a common basis of understanding between the producer, distributor, and consumer and should not be confused with any plan of governmental regulation or control. The United States Department of Commerce has no regulatory power in the enforcement of their provisions, but since they represent the will of the interested groups as a whole, their provisions through usage soon become established as trade customs, and are made effective through incorporation into sales contracts by means of labels, invoices, and the like.

2. *The acceptor's responsibility.*—The purpose of Commercial Standards is to establish, for specific commodities, nationally recognized grades or consumer criteria, and the benefits therefrom will be measurable in direct proportion to their general recognition and actual use. Instances will occur when it may be necessary to deviate from the standard and the signing of an acceptance does not preclude such departures; however, such signature indicates an intention to follow the standard, where practicable, in the production, distribution, or consumption of the article in question.

3. *The Department's responsibility.*—The major function, performed by the Department of Commerce in the voluntary establishment of Commercial Standards on a nationwide basis is fourfold: First, to act as an unbiased coordinator to bring all interested parties together for the mutually satisfactory adjustment of trade standards; second, to supply such assistance and advice as past experience with similar programs may suggest; third, to canvass and record the extent of acceptance and adherence to the standard on the part of producers, distributors, and users; and fourth, after acceptance, to publish and promulgate the standard for the information and guidance of buyers and sellers of the commodity.

4. *Announcement and promulgation.*—When the standard has been endorsed by a satisfactory majority of production or consumption in the absence of active, valid opposition, the success of the project is announced. If, however, in the opinion of the standing committee or of the Department of Commerce, the support of any standard is inadequate, the right is reserved to withhold promulgation and publication.